

[0087] As used in this application, the term ‘circuitry’ refers to all of the following:

[0088] (a) hardware-only circuit implementations (such as implementations in only analog and/or digital circuitry) and

[0089] (b) to combinations of circuits and software (and/or firmware), such as (as applicable): (i) to a combination of processor(s) or (ii) to portions of processor(s)/software (including digital signal processor(s)), software, and memory(ies) that work together to cause an apparatus, such as a mobile phone or server, to perform various functions) and

[0090] (c) to circuits, such as a microprocessor(s) or a portion of a microprocessor(s), that require software or firmware for operation, even if the software or firmware is not physically present.

[0091] This definition of ‘circuitry’ applies to all uses of this term in this application, including in any claims. As a further example, as used in this application, the term “circuitry” would also cover an implementation of merely a processor (or multiple processors) or portion of a processor and its (or their) accompanying software and/or firmware. The term “circuitry” would also cover, for example and if applicable to the particular claim element, a baseband integrated circuit or applications processor integrated circuit for a mobile phone or a similar integrated circuit in a server, a cellular network device, or other network device.

[0092] The blocks illustrated in the FIGS. 2 & 4 may represent steps in a method and/or sections of code in the computer program 84. The illustration of a particular order to the blocks does not necessarily imply that there is a required or preferred order for the blocks and the order and arrangement of the block may be varied. Furthermore, it may be possible for some blocks to be omitted.

[0093] Where a structural feature has been described, it may be replaced by means for performing one or more of the functions of the structural feature whether that function or those functions are explicitly or implicitly described.

[0094] The light sensor 10 performs the function of sensing light and may be replaced by any suitable light sensing means. It may be a light detector.

[0095] The light source 20 performs the function of providing light used by a display and may be replaced by any suitable lighting means.

[0096] The controller 30 performs the function of processing the output of the light sensor 10 and causing an effect on the light output at the display, for example, causing an effect on the light output at the display originating from the light source 20 and may be replaced by any suitable control or processing means. The controller 30 may be, for example, a processor (including dual-core and multiple-core processors), digital signal processor, controller, encoder, decoder. In some but not necessarily all examples it may comprise memory such as, for example, random access memory (RAM) or read only memory (ROM). In some but not necessarily all examples it may use, for example, software or firmware.

[0097] The display 70 performs the function of providing content to a user visually and may be replaced by any suitable display means. The display 70 comprises display circuitry.

[0098] As used here ‘module’ refers to a unit or apparatus that excludes certain parts/components that would be added by an end manufacturer or a user.

[0099] The controller 30 may be a module. The controller 30 in combination with the light sensor 10 and light source

20 may be a module. The controller 30 in combination with the light sensor 10, light source 20 and lightguide 76 may be a module.

[0100] The term ‘comprise’ is used in this document with an inclusive not an exclusive meaning. That is any reference to X comprising Y indicates that X may comprise only one Y or may comprise more than one Y. If it is intended to use ‘comprise’ with an exclusive meaning then it will be made clear in the context by referring to “comprising only one.” or by using “consisting”.

[0101] In this brief description, reference has been made to various examples. The description of features or functions in relation to an example indicates that those features or functions are present in that example. The use of the term ‘example’ or ‘for example’ or ‘may’ in the text denotes, whether explicitly stated or not, that such features or functions are present in at least the described example, whether described as an example or not, and that they can be, but are not necessarily, present in some of or all other examples. Thus ‘example’, ‘for example’ or ‘may’ refers to a particular instance in a class of examples. A property of the instance can be a property of only that instance or a property of the class or a property of a sub-class of the class that includes some but not all of the instances in the class.

[0102] Although embodiments of the present invention have been described in the preceding paragraphs with reference to various examples, it should be appreciated that modifications to the examples given can be made without departing from the scope of the invention as claimed.

[0103] For example, in some examples an image may be colour separated into primary colour planes. In displays where grey shade is created by subfield duration, each subfield is called a bit plane, representing the bit values of the grey shade. All these colour planes or grey shade planes are summed up to an image. The above described examples can be applied to displays that form the image either directly or via image planes e.g. colour planes or bit planes. Therefore, the timings, for example as illustrated in FIG. 3, can be applied to either frame, field, or subfield, the two latter of which correspond to different planes of image data. The terms ‘display period’ and ‘image’, for example, should be interpreted to cover these examples.

[0104] Features described in the preceding description may be used in combinations other than the combinations explicitly described.

[0105] Although functions have been described with reference to certain features, those functions may be performable by other features whether described or not.

[0106] Although features have been described with reference to certain embodiments, those features may also be present in other embodiments whether described or not.

[0107] Whilst endeavoring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

[0108] I/we claim:

1. A method, comprising:

causing synchronization of a local time frame and refresh of a display;

writing an image to the display during a write duration;